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OPTICAL COHERENCE TOMOGRAPHY ASSESSMENT FOR BIOLIMUS-ELUTING STENT AND EVEROLIMUS-ELUTING STENT IN THE VERY EARLY PERIOD

i2 Poster Contributions
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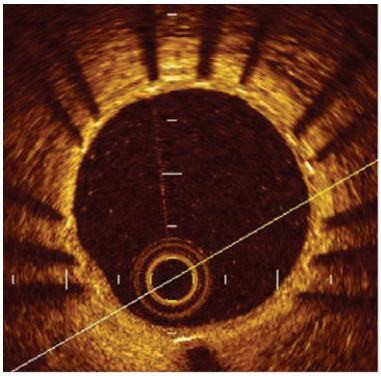
Background: Biolimus-eluting stent (BES) and everolimus-eluting stent (EES) are expected to provide minimal inflammatory reaction and good neointimal coverage. However, vessel response in the very early period after BES and EES implantation remains unclear. Our aim was to assess detailed response at 1-month after BES and EES implantation using optical coherence tomography (OCT).

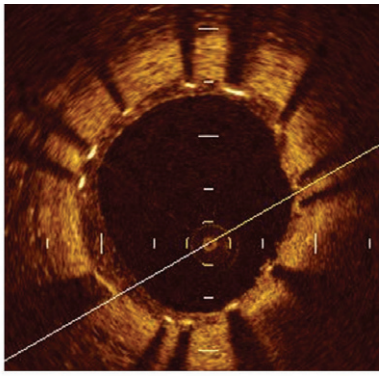
Methods: Between February and August 2011, 13 BESs and 20 EESs were implanted in 9 and 12 patients, respectively. At 1-month after implantation, neointimal thickness (NIT) and strut apposition on the vessel wall were analyzed by OCT at each stent strut with 1.0 mm intervals.

Results: At 34.8±6.0 days after implantation, there were no adverse cardiac events. A total of 4244 struts (BES; 1339, EES; 2905) were evaluated by OCT. There was no significant difference in NIT between BESs and EESs (50.4±28.8 μm vs. 51.8±42.8 μm, $p = 0.11$). The frequency of well-apposed strut with neointima in BESs was significantly greater than that in EESs (87.1% vs. 77.3%, $p < 0.001$). Of well-apposed struts with neointima, high-signal homogeneous band was more frequently observed in BESs than in EESs (91.8% vs. 83.6%, $p < 0.001$).

Conclusion: Struts of BESs are mostly covered with neointima even at 1-month compared with those of EESs. In addition, high-signal homogeneous band, indicating the mature neointima by OCT, is more frequently observed in BESs than in EESs. These findings suggest that vessel response after BES implantation is better than that of EES.



Homogeneous high-signal band



Heterogeneous low-signal band